



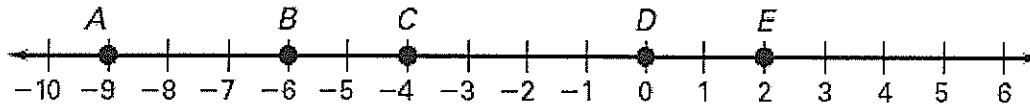
Name: \_\_\_\_\_  
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 Geometry, Period \_\_\_\_\_  
 Due Date: Fri, 19 Sep 2014

HW 15

**Geometry  
Homework**

Failure to show work and write in complete sentences will result in a LaSalle. Answers should be boxed. *Form A*

Use the number line below to answer questions 1 – 4.



1. Use absolute value to demonstrate that the distance, in coordinate units, between points A and B is 3:

2. Use absolute value to calculate the distance between points B and E:

3. Use absolute value to show how much longer is AD than BE.

$$\overline{AD} = |-10 - 0| =$$

$$\overline{BE} = |-6 - 2| =$$

4. Use absolute value to show how much longer is CD than DE.

Use the description of the points to answer questions 5 – 6. You may check your work using a number line, but you must *show your calculations* using **absolute value**.

Point W is 3, X is -5, Y is -16, and Z is 11.

5. What is the distance, in coordinate units, between points W and Z?

$$\overline{WZ} = |3 - 11|$$

6. What is the distance, in coordinate units, between points Y and Z?

7. How much longer is WY than XZ?

8. How much longer is YZ than WX?

9a. On the number line below, show the two points that demonstrate  $|x| = 7$ , meaning "the absolute value of x is 7" or "x is 7 away from 0".



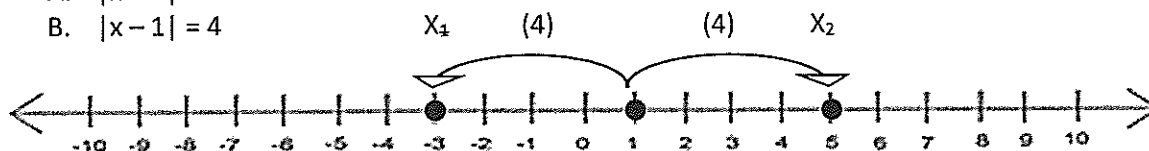
9b. Write the solution set to  $|x|=7$ : {\_\_\_\_, \_\_\_\_}

9c. What is the difference between the two possible values for x? \_\_\_\_\_. Explain why this is the answer using the number line:

10a. Which of the following absolute value equations describes the number line below? Explain why.

A.  $|x - 4| = 1$

B.  $|x - 1| = 4$



10b. How would you describe this situation in words?

The distance from  $X_1$  to 1 is \_\_\_\_\_

The distance from 1 to  $X_2$  is \_\_\_\_\_

The distance from  $X_1$  to  $X_2$  is \_\_\_\_\_

10c. What is the difference between the two values of X (5 and -3)? Demonstrate this using an algebraic equation.

10d. How does this relate to the original absolute value equation?

10a. On the number line below, show the two possible points for x on the number line for the equation  $|x - 3| = 7$ :



10b. Using the number line, demonstrate how this equation means "x is 7 units away from 3."

10c. Demonstrate that this works logically (algebraically):

10d. Write the solution set to  $|x - 3| = 7$ : {\_\_\_\_, \_\_\_\_}

10e. What is the difference between these two possible values for x?

11a. Assume that  $|x - a| = b$ . Express this in words:

11b. Show this on a number line:

